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Item 3 (b)

LAND RESOURCES: SOIL LOSS

Text submitted by the Chairman on the basis of negotiations held on document A/CONF.151/PC/100/Add.19

PROMOTING SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT

(Section II, chapter 6 of Agenda 21)

Corrigendum

1. All document symbols following ** are deleted.

2. Paragraph 3 should read:

Major adjustments are needed in agricultural, environmental and macroeconomic policy, at both national and international levels, in developed as well as developing countries, to create the conditions for sustainable agriculture and rural development (SARD). The major objective of SARD is to increase food production in a sustainable way and enhance food security. This will involve education initiatives, utilization of economic incentives, and the development of appropriate and new technologies, thus ensuring stable supplies of nutritionally adequate food and access to those supplies by vulnerable groups and production for markets; employment and income generation to alleviate poverty; and natural resource management and environmental protection.

3. Paragraph 5, programme area L, should read:

Evaluation of the effects of ultraviolet radiation on plants and animals caused by the depletion of stratospheric ozone layer.

4. Paragraph 7

Last sentence should read:

The major thrust of food security in this case is to bring about a significant increase in agricultural production in a sustainable way and to achieve substantial improvement in people's entitlement to adequate food and culturally appropriate food supplies.

5. The following paragraphs relating to financing and cost evaluation are bracketed:

15, 26, 37, 48, 58, 94, 106 and 116.

6. The beginning of paragraphs 16, 17, 18, 27, 28, 29, 38, 39, 40, 49, 50, 51, 59, 60, 61, 95, 96, 97, 107, 108, 109, 117, 118 and 119 should read:

"Governments at the appropriate level and with the support of the relevant international and regional organizations should ..."

7. Paragraph 43 should read:

To harmonize planning procedures, involve farmers in the planning process, collect land resource data, design and establish databases, define land areas of similar capability, identify resource problems and values that need to be taken into account to establish mechanisms to encourage efficient and environmentally sound use of resources.

8. Paragraph 45 (a)

For "land resource departments of planning, management, ..."
read "land resource planning, management, ..."

9. Paragraph 55 (b)

For "where appropriate"
read "where appropriate and possible".

10. Paragraph 56 (a)

For "state of each nation's land resources"
read "state of its land resources".

11. Programme areas G and F should read:

G. CONSERVATION AND SUSTAINABLE UTILIZATION OF PLANT GENETIC RESOURCES FOR FOOD AND SUSTAINABLE AGRICULTURE (PGRFA)

Basis for action

63. Plant genetic resources for agriculture (PGRFA) are an essential resource to meet future needs for food. Threats to the security of these resources are growing, and efforts to conserve, develop and use genetic diversity are underfunded and understaffed. Many existing genebanks provide inadequate security and, in some instances, the loss of plant genetic diversity in genebanks is as great as it is in the field.

64. The primary objective is to safeguard the world's genetic resources while preserving them to use sustainably. This includes the development of measures to facilitate the conservation and use of plant genetic resources, networks of in situ conservation areas and use of tools such as ex situ collections and germ plasma banks. Special emphasis could be placed on the building of endogenous capacity for characterization, evaluation and utilization of PGRFA, particularly for the minor crops and other underutilized or non-utilized species of food and agriculture, including tree species for agro-forestry. Subsequent action could be aimed at consolidation and efficient management of networks of in situ conservation areas and use of tools such as ex situ collections and germ plasma banks.

65. Major gaps and weaknesses exist in the capacity of existing national and international mechanisms to assess, study, monitor and use plant genetic resources to increase food production. Existing institutional capacity, structures and programmes are generally inadequate and largely underfunded. There is genetic erosion of invaluable crop species. Existing diversity in crop species is not used to the extent possible for increased food production in a sustainable way. 6/

Objectives

66. To complete the first regeneration and safe duplication of existing ex situ collections on a world-wide basis as soon as possible;

67. To collect and study plants useful for increasing food production through joint activities, including training, within the framework of networks of collaborating institutions;

68. Not later than 2000, to adopt policies and strengthen or establish programmes for in situ, on-farm and ex situ conservation and sustainable use of plant genetic resources for food and agriculture, integrated into strategies and programmes for sustainable agriculture;

68 bis To take appropriate measures for the fair and equitable sharing of benefits and results of research and development in plant breeding between the sources and users of plant genetic resources.

Activities

Management:

69. Governments at the appropriate level, with the support of the relevant international and regional organizations should:

(a) Develop and strengthen institutional capacity, structures and programmes for conservation and use of PGRFA;

(b) Strengthen and establish research in the public domain on PGRFA evaluation and utilization, with the objectives of sustainable agriculture and rural development in view;

(c) Develop multiplication/propagation, exchange and dissemination facilities for PGRFAs (seeds and planting materials), particularly in developing countries; monitoring, control and evaluation of plant introductions;

(d) Prepare plans or programmes of priority action on conservation and sustainable use of PGRFA based, as appropriate, on country studies on PGRFA;

(e) Promote crop diversification in agricultural systems where appropriate, including new plants with potential value as food crops;

(f) Promote utilization as well as research on poorly known, but potentially useful, plants and crops where appropriate;

(g) Strengthen national capabilities for utilization of PGRFA, plant breeding and seed production capabilities, both by specialized institutions and farmers' communities;

Data and information:

70. Governments, at the appropriate level and with the support of the relevant international and regional organizations, should:

(a) Develop strategies for networks of in situ conservation areas and use of tools, such as on-farm ex situ collections, germplasm banks and related technologies;

(b) Establish ex situ base collection networks;

(c) Review periodically and report on the situation on PGRFA using existing systems and procedures;

(d) Characterize and evaluate PGRFA material collected; disseminate information to facilitate the use of PGRFA collections, and assess genetic variation in collections.

International and regional cooperation and coordination:

71. The appropriate United Nations agencies and regional organizations should:

(a) Strengthen the Global System on the Conservation and Sustainable Use of PGRFA through, inter alia, accelerating the development of the Global Information and Early Warning System to facilitate the exchange of information; developing ways to promote the transfer of environmentally sound technologies, in particular to developing countries; and taking further steps to realize Farmers' Rights;

(b) Develop subregional, regional and global networks of PGRFA in situ protected areas;

(c) Prepare periodic State of the World Reports on PGRFA;

(d) Prepare a rolling global cooperative plan of action on PGRFA;

(e) Promote, for 1994, the Fourth International Technical Conference on the Conservation and Sustainable Use of PGRFA to adopt the first State of the World Report and the first Global Plan of Action on the Conservation and Sustainable Use of PGRFA;

(f) Adjust the Global System for the Conservation and Sustainable Use of PGRFA in line with the outcome of the negotiations of a convention on biological diversity.

Means of implementation

Financing and cost evaluation:

72. [The total financing required to implement this programme area is about US$ 600 million per year, including international concessional financing of about US$ 300 million. This includes about US$ 10 million for strengthening international institutions, the remaining US$ 290 million to be divided between development and global environmental issues.]

Scientific and technological means:

73. Governments, at the appropriate level and with the support of the relevant international and regional organizations, should:

(a) Develop basic science research in areas such as plant taxonomy and phytogeography, utilizing recent developments, such as computer sciences, molecular genetics and in vitro cryopreservation;

(b) Develop major collaborative projects between research programmes in developed and developing countries, particularly for the enhancement of poorly known or neglected crops;

(c) Promote cost-effective technologies for keeping duplicate sets of ex situ collections (that can also be used by local communities);

(d) Develop further conservation sciences in relation to in situ conservation and technical means to link it with ex situ conservation efforts.

Human resources development:

74. Governments, at the appropriate level and with the support of the relevant international and regional organizations, should:

(a) Promote training programmes at both undergraduate and post-graduate levels in conservation sciences for running PGRFA facilities and for the design and implementation of national programmes in PGRFA;

(b) Raise the awareness of agricultural extension services in order to link PGRFA activities with user communities;

(c) Develop training materials to promote conservation and utilization of PGRFA at local level.

Capacity-building:

75. Governments, at the appropriate level and with the support of the relevant international and regional organizations, should establish national policies to provide legal status for and strengthen legal aspects of PGRFA, including long-term financial commitment for germplasm collections and implementation of activities in PGRFA.

H. CONSERVATION AND SUSTAINABLE UTILIZATION OF ANIMAL GENETIC RESOURCES FOR SUSTAINABLE AGRICULTURE

Basis for action

76. The need for increased quantity and quality of animal products and for draught animals calls for conservation of the existing diversity of animal breeds to meet future requirements, including those for use in biotechnology. Some local animal breeds have unique attributes for adaptation, disease resistance and specific uses which, in addition to their socio-cultural value, should be preserved. These local breeds are threatened by extinction as a result of the introduction of exotic breeds and of changes in livestock production systems.

Objectives

77. To enumerate and describe all breeds of livestock used in animal agriculture in as broad a way as possible and begin a 10-year programme of action;

78. To establish and implement action programmes to identify breeds at risk together with the nature of the risk and appropriate preservation measures;

79. To establish and implement development programmes for indigenous breeds in order to guarantee their survival, avoiding the risk of their being replaced by breed substitution or cross-breeding programmes.

Activities

Management:

80. Governments, at the appropriate level and with the support of the relevant international and regional organizations, should:

(a) Draw up breed preservation plans, for endangered populations, including semen/embryo collection and storage, farm-based conservation of indigenous stock or in situ preservation;

(b) Plan and initiate breed development strategies;

(c) Select indigenous populations on the basis of regional importance and genetic uniqueness, for a 10-year programme, followed by selection of an additional cohort of indigenous breeds for development.

Data and information:

81. Governments at the appropriate level, with the support of the relevant international and regional organizations, should prepare and complete national inventories of available animal genetic resources. Cryogenic storage could be given priority over characterization and evaluation. Training of nationals in conservation and assessment techniques would be given special attention.

International and regional cooperation and coordination:

82. The appropriate United Nations and other international and regional agencies should:

(a) Promote the establishment of regional genebanks to the extent that they are justified, based on principles of technical cooperation among developing countries (TCDC);

(b) Process, store and analyse animal genetic data at the global level, including: production of a World Watch list and Early Warning of Endangered Breeds; global assessment of scientific and intergovernmental guidance of the programme and review of regional and national activities; development of methodologies, norms and standards (including international agreements), monitoring of their implementation and related technical and financial assistance;

(c) Prepare and publish a comprehensive database of animal genetic resources, describing each breed, its derivation, its relationship with other breeds, effective population size and a concise set of biological and production characteristics;

(d) Prepare and publish a World Watch list on farm animal species at risk to enable national Governments to take action to preserve endangered breeds and to seek technical assistance, where necessary.

Means of implementation

Financing and cost evaluation:

83. [The total financing required to implement this programme area is about US$ 200 million per year, including international concessional financing of about US$ 100 million. This includes about US$ 10 million for strengthening international institutions, the remaining US$ 80 million to be divided between development and global environmental issues.]

Scientific and technological means:

84. Governments, at the appropriate level and with the support of the relevant international and regional organizations, should:

(a) Use computer-based data banks and questionnaires to prepare a Global Inventory/World Watch list;

(b) Using cryogenic storage of germplasm, preserve breeds at serious risk and other material from which genes can be reconstructed.

Human resources development:

85. Governments, at the appropriate level and with the support of the relevant international and regional organizations, should:

(a) Sponsor training courses for nationals to obtain the necessary expertise for data collection and handling and for the sampling of genetic material;

(b) Enable scientists and managers to establish an information base for indigenous livestock breeds and promote programmes to develop and conserve essential livestock genetic material.

Capacity-building:

86. Governments, at the appropriate level and with the support of the relevant international and regional organizations, should:

(a) Establish in-country facilities for artificial insemination centres and in situ breeding farms;

(b) Promote in-country programmes and related physical infrastructure for animal livestock conservation and breed development, as well as for strengthening national capacities to take preventive action when breeds are endangered.

12. Paragraph 93

Add a new subparagraph (c) as follows:

(c) Develop proper IPM comprising selection of variety and biological, physical and cultural control, as well as chemical control, taking into account specific regional conditions.

13. Paragraph 109 (b) should read:

(b) Where appropriate, strengthen existing advisory services and train staff, develop and test new technologies and facilitate the adoption of practices to upgrade and maintain full productivity of the land.

14. Add new programme area L to read:

EVALUATION OF THE EFFECTS OF ULTRAVIOLET RADIATION ON PLANTS AND ANIMALS CAUSED BY THE DEPLETION OF STRATOSPHERIC OZONE LAYER

Basis for action

The increase of ultraviolet radiation as a consequence of the depletion of the stratospheric ozone Layer is a phenomenon that has been recorded in different regions of the world, particularly in the southern hemisphere. Consequently, it is important to evaluate its effects on plant and animal life, as well as on sustainable agricultural development.

Objective

To undertake research to determine the effects of increased ultraviolet radiation resulting from stratospheric ozone layer deterioration on the earth's surface, and on plant and animal life in affected regions, as well as its impact on agricultural development.

Activities

In affected regions, Governments at the appropriate level and with the support of the relevant international and regional organizations, should take the necessary measures, through institutional cooperation, to facilitate the implementation of research and evaluation regarding enhanced ultraviolet radiation on plant and animal life as well as on agricultural activities.

15. Note page:

Note 8/ is deleted.